RECEIVED
CENTRAL FAX CENTER

APR 12 2006

Doc Code: AP.PRE.REQ

PTO/SB/33 (07-05)
Approved for use through xx/xx/200x. OMB 0651-00xx
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): 1033-A00607 (SBC 0102 PUS)

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]

on 4-12-2006

Signature Esther Hy Yu

Typed or printed name Esther H. Yu

Application Number	Filed
09/750,406	December 28, 2000

First Named Inventor: Gregory W. Gough

Art Unit	Examiner
2646	HAROLD, Jefferey F.

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- ☐ attorney or agent of record. Registration number _____
- ☑ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34: 38,342

Signature

Jeffrey G. Toler
Typed or printed name

512-327-5515
Telephone number

4-12-2006
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☑ *Total of 1 forms are submitted.

CUSTOMER NO.
60533

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Gregory W. Gough et al.		
Title:	**XDSL SYSTEM HAVING SELECTABLE HYBRID CIRCUITRY**		
App. No.:	09/750,406	Filed:	December 28, 2000
Examiner:	HAROLD, Jefferey F.	Group Art Unit:	2646
Atty. Dkt. No.:	1033-A00607 (SBC 0102 PUS)	Confirmation No.:	6917

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REMARKS IN SUPPORT OF THE PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Sir:

In response to the Final Office Action mailed on January 13, 2006 (hereinafter, "the Final Action"), and pursuant to the Notice of Appeal and Pre-Appeal Brief Request for Review submitted herewith, Applicants hereby cancel claims 7, 10 and 12 without prejudice or disclaimer. The rejections of claims 7, 10 and 12 are therefore rendered moot. Applicants traverse the rejection of claims 1-3, 6, and 14-19 under 35 U.S.C. §102(e) over U.S. Patent No. 6,724,890 ("Bareis") at page 2 of the Final Office Action. Applicants hereby request review of the following issues:

1. Claims 1-3, and 6 Are Allowable over Bareis

None of the cited references teach or suggest the specific combination of claim 1. For example, none of the cited references, including Bareis, disclose or suggest a hybrid circuit in operative connection with the remote end of a transmission line and also an xDSL modem associated with a subscriber premises, where the hybrid circuit includes a plurality of selectable impedance circuits. Moreover, none of the cited references, including Bareis, teach or suggest a switch for connection to each of a plurality of selectable impedance circuits in-line with an xDSL modem and also the remote end of the transmission line in response to a control signal, where

one of the plurality of impedance circuits has an impedance value equal to a characteristic line impedance of the transmission line without a bridged tap, and wherein another of the plurality of impedance circuits has an impedance value equal to a characteristic line impedance with a bridged tap.

Applicants note that the disclosure of Bareis is directed to an xDSL modem that performs impedance matching to termination impedances. *See* Bareis, Col. 7, lines 51-53. Bareis discloses a central office modem 100 and a customer premises modem 200, both of which are adapted to adjust their respective impedance matching networks 124, 126, 224, and 226 to "optimize the termination impedance[s]." *See Bareis*, col. 6, line 13-col. 7, line 59. Bareis discloses and addresses the problem that conventional use of fixed impedance matches in a transmitter interface and/or receiver interface provides only a compromise matching impedance. *See* Bareis, col. 1, lines 49-56. Moreover, Bareis discloses that performing impedance matching at high frequencies with subscriber line interface circuitry and telephone loads being randomly attached provides a complex impedance matching problem. *See Bareis*, col. 2, lines 28-34.

In contrast to Bareis, claim 1 recites a hybrid circuit that includes selectable impedance circuits. The present application discloses a particular illustrative embodiment of hybrid circuitry 2 that separates signals received on a two-wire transmission line 4 into respective upstream and downstream communication channels. *See Application*, p. 1, paragraph 6 and FIG. 1. Claim 1 recites that the hybrid circuit is in operative communication with the remote end of a transmission line and also an xDSL modem associated with the subscriber premises. In Bareis, the only impedance adjustment elements are elements 124, 126, 224, and 226 included in the modems 100 and 200. *See Bareis*, Figures 1 and 2, and col. 5, lines 27-30, and col. 6, line 13-col. 8, line 11. Bareis fails to disclose or suggest a hybrid circuit that includes selectable impedance circuits, as recited by claim 1.

Bareis fails to disclose or suggest at least one element of independent claim 1, and of claims 2, 3 and 6, at least by virtue of their dependency from independent claim 1. Additionally, the dependent claims 2, 3 and 6 include other features that are not disclosed or suggested by Bareis. For example, Bareis fails to disclose or suggest an xDSL system, where the number of the plurality of selectable impedance circuits equals four, as recited by claim 3. Therefore, the rejection of claims 1-3 and 6 is improper and should be withdrawn.

Additionally, Bareis is directed to an entirely different problem from claim 1. In particular, Bareis discloses that it is important to properly match impedances of equipment connected to twisted pair telephone lines carrying modem signal transmissions. *See Bareis*, col. 4, lines 16-20. Bareis discloses that the impedance matching described in the embodiments "pertains generally to xDSL and customer premises broadband modem equipment when telephone sets, facsimile equipment, or the like that are attached to the line are taken off-hook for voice-band telephone calls." *See Bareis*, col. 4, lines 25-31. Bareis discloses that off-hook telephone sets significantly change the telephone line loading and termination impedance at high frequencies. *See Bareis*, col. 4, lines 31-33. To resolve this problem, Bareis discloses:

> To optimize the termination matching network, V_F and V_R information is transmitted to the customer premises modem DSP 212 where impedance correction values are calculated and applied to impedance matching network 224 (ZR_B) and network 228 (ZR_C). V_F and V_R information from the transmitting modem is sent via the transmission line, preferably in a data packet. Alternatively, the impedance correction values could be calculated in the DSP 112 of the central office modem 110 and transmitted to the receiving modem 200 and DSP 212 for application to impedance matching network 224 (ZR_B) and network 228 (ZR_C).

Bareis, col. 7, lines 19-29.

In contrast to Bareis, the present application recognizes that bridged taps, which are included in approximately 75% of subscriber loops and which may be as close as 250 to 500 feet from 33% of the subscriber premises, can significantly impact the impedance characteristics of a subscriber loop. *See* Application, p. 2, paragraph 26. Bridged taps are non-terminated copper pair cables connected in parallel to the subscriber line. *See Application*, p. 1, paragraph 7. Claim 1, for example, recites that one of a plurality of impedance circuits has an impedance value equal to a characteristic line impedance of a transmission line without a bridged tap, and that another of the plurality of impedance circuits has an impedance value equal to a characteristic line impedance with a bridged tap. Bareis is directed to automatic and adaptive telephone line termination impedance matching at the customer premises (*See Bareis*, Abstract and col. 4, lines 16-45). Bareis makes no mention of bridged taps. Accordingly, Bareis is directed to an entirely different problem than claim 1 of the present application.

Further, Bareis discloses an impedance matching network that continually measures variation between the transmitted and received signals in each portion of the frequency spectrum so as to automatically adapt the termination and/or source impedances to the attached transmission line. *See Bareis*, col. 3, lines 4-10. The added complexity and cost of continual

measurements of impedance variations are tolerated in the system of Bareis to adapt to changes in off-hook and on-hook conditions at the customer premises. *See Bareis*, col. 4, lines 26-33. In contrast, an illustrative embodiment of the xDSL system of the present application is not concerned with impedance changes of the termination impedance during operation, and therefore executes performance and selection analysis only when the modem is power cycled. *See Application*, p. 2, paragraph 0023.

Accordingly, Applicants have provided further evidence that Bareis is directed to a different technical problem than claim 1 of the present application. For at least the foregoing reasons, claims 1-3 and 6 are allowable over Bareis.

2. Claim 14 Is Allowable over Bareis

None of the cited references teach or suggest the specific combination of claim 14. For example, none of the cited references, including Bareis, disclose or suggest providing a hybrid circuit in-line with the remote end of a transmission line and also an xDSL modem associated with a subscriber premises, where the hybrid circuit includes a plurality of selectable impedance circuits, as recited by claim 14. Further, none of the cited references disclose or suggest that one of the plurality of selectable impedance circuits has an impedance value that is equal to a characteristic line impedance with a bridged tap, as recited by claim 14.

As previously discussed, Bareis fails to disclose or suggest a hybrid circuit that includes a plurality of selectable impedance circuits. Moreover, Bareis is directed to an entirely different problem from that of claim 14, and makes no mention of a hybrid circuit or of bridged taps. Instead, Bareis discloses terminating modems 100 and 200 that include adjustable impedance matching networks 124, 126, 224, and 226. *See Bareis*, col. 6, line 13-col. 7, line 59. Bareis simply fails to disclose or suggest a hybrid circuit including a plurality of selectable impedance circuits and impedance matching to a bridged tap, as recited by claim 14. Therefore, the rejection of claim 14 is improper and should be withdrawn.

3. Claims 15-19 Are Allowable over Bareis

Claim 15 recites a hybrid circuit in operative communication with the remote end of a transmission line and also an xDSL modem associated with a subscriber premises, where the hybrid circuit includes a plurality of selectable impedance circuits.

As previously discussed, Bareis fails to disclose or suggest a hybrid circuit that includes a plurality of selectable impedance circuits, and Bareis fails to disclose or suggest an impedance

circuit including a 460 ohm resistor in parallel with a 1200 ohm resistor and a 520 pF capacitor, as recited by claim 15. Moreover, Bareis is directed to an entirely different problem from that of claim 15. Bareis makes no mention of a hybrid circuit. Bareis discloses terminating modems 100 and 200 that include adjustable impedance matching networks 124, 126, 224, and 226. *See Bareis*, col. 6, line 13-col. 7, line 59. Bareis simply fails to disclose or suggest a hybrid circuit including a plurality of selectable impedance circuits, as recited by claim 15. Accordingly, Bareis fails to disclose or suggest at least one element of independent claim 15. Therefore, the rejection of claim 15 is improper and should be withdrawn. Moreover, Bareis fails to disclose or suggest at least one element of claims 16-19, at least by virtue of their dependence from allowable claim 15.

Additionally, the dependent claims 16-19 include further features that are not disclosed or suggested by Bareis. Bareis fails to disclose or suggest a hybrid circuit that includes four selectable impedance circuits, as recited by claim16. Therefore, the rejection of claims 15-19 over Bareis is improper and should be withdrawn.

CONCLUSION

Applicants have pointed out specific features of the claims not disclosed, suggested or rendered obvious by the references applied in the Office Action. Accordingly, Applicants respectfully request reconsideration and withdrawal of each of the objections and rejections, as well as an indication of allowability of each of the claims now pending.

Respectfully submitted,

4-12-2006
Date

Jeffrey G. Toler, Reg. No. 38,342
Attorney for Applicant(s)
TOLER SCHAFFER, L.L.P.
5000 Plaza On The Lake, Suite 265
Austin, Texas 78746
(512) 327-5515 (phone)
(512) 306-8545 (fax)

JGT/RMR